

## IN THE CLAIMS

The following is a complete listing of the claims which replace any prior versions:

- 1           1.       (Currently Amended) An assisted pole tip arrangement, comprising:  
2           a pole tip; and  
3           a magnetic bias field source disposed proximate to the pole tip for providing a  
4           magnetic bias field for enhancing magnetization switching of the pole tip;  
5           wherein the magnetic bias field is generated by bias-current flowing  
6           perpendicularly to an air bearing surface through the magnetic bias source.
  
- 1           2.       (Original)     The assisted pole tip arrangement of claim 1 wherein the  
2           pole tip comprises a longitudinal axis, the magnetic bias field being oriented substantially  
3           transverse to the longitudinal axis of the pole tip.
  
- 1           3.       (Original)     The assisted pole tip arrangement of claim 1 wherein the  
2           magnetic bias field source is an external magnet.
  
- 1           4.       (Original)     The assisted pole tip arrangement of claim 1 wherein the  
2           magnetic bias field source is a magnet provided in-situ proximate the pole tip.
  
- 1           5.       (Original)     The assisted pole tip arrangement of claim 1 wherein the  
2           magnetic bias field source comprises a current path in-situ proximate to the pole tip, the  
3           current path being coupled to a write coil for using a write current to provide the  
4           magnetic bias field.

1           6.       (Original)     The assisted pole tip arrangement of claim 5 wherein the  
2     current path comprises a single path proximate to the pole tip, the single path providing a  
3     parallel path for write current to flow.

1           7.       (Original)     The assisted pole tip arrangement of claim 5 wherein the  
2     current path comprises a first leg and a second leg, the first leg extending across the pole  
3     and the second leg arranged proximate to the pole tip.

1           8.       (Original)     The assisted pole tip arrangement of claim 5 wherein the  
2     first and second leg are disposed between the write coil and a negative pole of the write  
3     coil.

1           9.       (Original)     The assisted pole tip arrangement of claim 1 wherein the  
2     magnetic bias field is transverse to an easy axis of magnetization for the pole tip.

1           10.      (Original)     The assisted pole tip arrangement of claim 1 wherein the  
2     magnetic bias field decreases an effective anisotropy-field opposing a driving-field and  
3     increases initial torque that the driving field has on the magnetization.

1           11.      (Original)     The assisted pole tip arrangement of claim 1 further  
2     comprising a lead coupled to the magnetic bias field source, the lead being formed with a  
3     thickness greater than a thickness of the magnetic bias field source to lower overall  
4     resistance.

1           12.   (Canceled)

1           13.   (Currently Amended) A magnetic head, comprising:

2           a first pole and a second pole, the first and second pole being separated to form a  
3 write gap at a pole tip;

4           a coil disposed between the first and second poles for producing at the write gap  
5 magnetic fields used to record data; and

6           a magnetic bias field source disposed proximate to the pole tip for providing a  
7 magnetic bias field for enhancing magnetization switching of the pole tip;

8           wherein the magnetic bias field is generated by bias-current flowing through the  
9 magnetic bias field source perpendicular to an air bearing surface.

1           14.   (Original)   The magnetic head of claim 13 wherein the pole tip  
2 comprises a longitudinal axis, the magnetic bias field being oriented substantially  
3 transverse to the longitudinal axis of the pole tip.

1           15.   (Original)   The magnetic head of claim 13 wherein the magnetic bias  
2 field source is an external magnet.

1           16.   (Original)   The magnetic head of claim 13 wherein the magnetic bias  
2 field source is a magnet provided in-situ proximate the pole tip.

1           17.    (Original)    The magnetic head of claim 13 wherein the magnetic bias  
2   field source comprises a current path in-situ proximate to the pole tip, the current path  
3   being coupled to a write coil for using a write current to provide the magnetic bias field.

1           18.    (Original)    The magnetic head of claim 17 wherein the current path  
2   comprises a single path proximate to the pole tip, the single path providing a parallel path  
3   for write current to flow.

1           19.    (Original)    The magnetic head of claim 17 wherein the current path  
2   comprises a first leg and a second leg, the first leg extending across the pole and the  
3   second leg arranged proximate to the pole tip.

1           20.    (Original)    The magnetic head of claim 17 wherein the first and second  
2   leg are disposed between the write coil and a negative pole of the write coil.

1           21.    (Original)    The magnetic head of claim 13 wherein the magnetic bias  
2   field is transverse to an easy axis of magnetization for the pole tip.

1           22.    (Original)    The magnetic head of claim 13 wherein the magnetic bias  
2   field decreases an effective anisotropy-field opposing a driving-field and increases initial  
3   torque that the driving field has on the magnetization.

1           23.    (Original)    The magnetic head of claim 13 further comprising a lead  
2   coupled to the magnetic bias field source, the lead being formed with a thickness greater  
3   than a thickness of the magnetic bias field source to lower overall resistance.

1           24.    (Canceled)

1           25.   (Currently Amended) A magnetic data storage system, comprising:  
2           at least one magnetic storage medium;  
3           a magnetic head, for reading data from and writing data to the at least one  
4 magnetic storage medium;  
5           a media translator for moving the at least one magnetic storage medium relative to  
6 the transducer; and  
7           a signal processing system, coupled to the media translator and to the magnetic  
8 head, for processing signals for the magnetic head and for controlling the media  
9 translator;  
10          wherein the magnetic head further comprises:  
11           a first pole and a second pole, the first and second pole being separated to  
12 form a write gap at a pole tip;  
13           a coil disposed between the first and second poles for producing at the  
14 write gap magnetic fields used to record data; and  
15           a magnetic bias field source disposed proximate to the pole tip for providing a  
16 magnetic bias field for enhancing magnetization switching of the pole tip;  
17          wherein the magnetic bias field is generated by bias-current flowing  
18 perpendicularly to an air bearing surface through the magnetic bias field source.

1           26.   (Original)   The magnetic data storage system of claim 25 wherein the  
2 pole tip comprises a longitudinal axis, the magnetic bias field being oriented substantially  
3 transverse to the longitudinal axis of the pole tip.

1           27.    (Original)    The magnetic data storage system of claim 25 wherein the  
2   magnetic bias field is transverse to an easy axis of magnetization for the pole tip.

1           28.    (Canceled)

1           29.    (Currently Amended) An assisted pole tip arrangement, comprising:  
2           means for providing magnetic fields for recording data on a magnetic recording  
3   medium; and  
4           means, operatively coupled to the means for providing magnetic field for  
5   recording data on a magnetic recording medium, for providing a magnetic bias field for  
6   enhancing magnetization switching of the means for providing magnetic fields for  
7   recording data on a magnetic recording medium;  
8             wherein the magnetic bias field is generated by bias-current flowing  
9   perpendicularly to an air bearing surface through the means for for providing a magnetic  
10   bias field.

1           30.    (Currently Amended) A magnetic head, comprising:  
2                means for providing a path for magnetic fields used to record data on a magnetic  
3   recording medium;  
4                means, coupled to the means for providing a path, for producing the magnetic  
5   fields used to record data; and  
6                means, coupled to the means for providing a path, for providing a magnetic bias  
7   field for enhancing magnetization switching of the means for providing a path for  
8   magnetic fields;  
9             wherein the magnetic bias field is generated by bias-current flowing  
10 perpendicularly to an air bearing surface through the means for for providing a magnetic  
11 bias field.